

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

SLINGSBY, Philip, Roy
Page White & Farrer
54 Doughty Street
London WC1N 2LS
ROYAUME-UNI

Date of mailing (day/month/year) 25 January 2002 (25.01.02)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 102357/PRS	
International application No. PCT/IB00/00989	International filing date (day/month/year) 30 June 2000 (30.06.00)

1. The following indications appeared on record concerning:

☒ the applicant ☐ the inventor ☐ the agent ☐ the common representative

Name and Address

NOKIA NETWORKS OY
Keilalahdentie 4
FIN-02150 Espoo
Finland

State of Nationality

FI

State of Residence

FI

Telephone No.

Facsimile No.

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person ☒ the name ☐ the address ☐ the nationality ☐ the residence

Name and Address

NOKIA CORPORATION
Keilalahdentie 4
FIN-02150 Espoo
Finland

State of Nationality

FI

State of Residence

FI

Telephone No.

Facsimile No.

Teleprinter No.

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned
<input type="checkbox"/> the International Searching Authority	<input checked="" type="checkbox"/> the elected Offices concerned
<input type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Anne BEUCHAT

Telephone No.: (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
 US Department of Commerce
 United States Patent and Trademark
 Office, PCT
 2011 South Clark Place Room
 CP2/5C24
 Arlington, VA 22202
 ETATS-UNIS D'AMERIQUE
 in its capacity as elected Office

Date of mailing (day/month/year) 08 March 2001 (08.03.01)	
International application No. PCT/IB00/00989	Applicant's or agent's file reference 102357/PRS
International filing date (day/month/year) 30 June 2000 (30.06.00)	Priority date (day/month/year) 30 June 1999 (30.06.99)
Applicant AHMAVAARA, Kalle	

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

30 January 2001 (30.01.01)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Pascal Piriou Telephone No.: (41-22) 338.83.38
--	--

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 102357/PRS	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/IB 00/ 00989	International filing date (day/month/year) 30/06/2000	(Earliest) Priority Date (day/month/year) 30/06/1999
Applicant NOKIA NETWORKS OY et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

2
☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No.
PCT/IB 00/00989

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04Q7/24

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 294 844 A (MOTOROLA INC) 8 May 1996 (1996-05-08) page 3, line 22 -page 4, line 25 claims 1,2	1, 4, 6, 9, 17, 28
A	--- BERRUTO E ET AL: "ARCHITECTURAL ASPECTS FOR THE EVOLUTION OF MOBILE COMMUNICATIONS TOWARD UMTS" IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS, US, IEEE INC. NEW YORK, vol. 15, no. 8, October 1997 (1997-10), page 1477-1486 XP000721279 ISSN: 0733-8716 the whole document --- -/--	1-29

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
 "E" earlier document but published on or after the international filing date
 "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
 "O" document referring to an oral disclosure, use, exhibition or other means
 "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
 "&" document member of the same patent family

Date of the actual completion of the international search

29 August 2000

Date of mailing of the international search report

04/09/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Pecci, R

INTERNATIONAL SEARCH REPORT

International Application No.
PCT/IB 00/00989

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>SCHIEDER A ET AL: "GRAN - A NEW CONCEPT FOR WIRELESS ACCESS IN UMTS" ISS. WORLD TELECOMMUNICATIONS CONGRESS. (INTERNATIONAL SWITCHING SYMPOSIUM), CA, TORONTO, PINNACLE GROUP, 21 September 1997 (1997-09-21), page 339-345 XP000704485 the whole document -----</p>	1-29

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No.

PCT/IB 00/00989



Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2294844 A	08-05-1996	AU 700136 B	24-12-1998
		AU 3980095 A	31-05-1996
		CN 1141111 A	22-01-1997
		DE 19581443 T	27-02-1997
		WO 9614719 A	17-05-1996
		FI 962789 A	03-09-1996
		JP 9507986 T	12-08-1997
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 102357/PRS		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IB00/00989	International filing date (day/month/year) 30/06/2000	Priority date (day/month/year) 30/06/1999	
International Patent Classification (IPC) or national classification and IPC H04Q7/24			
Applicant NOKIA NETWORKS OY et al.			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input checked="" type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application 			
Date of submission of the demand 30/01/2001		Date of completion of this report 10.10.2001	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized officer Pais Gonçalves, A Telephone No. +49 89 2399 8806 	

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IB00/00989

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-12 as originally filed

Claims, No.:

1-32 as originally filed

Drawings, sheets:

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IB00/00989

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 30-32.

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 30-32 are so unclear that no meaningful opinion could be formed (*specify*):
see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the said claims Nos. .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Yes: Claims 1-29

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IB00/00989

	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-29
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-29
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IB00/00989

III.

Claims 30 to 32 do not fulfil the requirements of Rule 6.2(a) PCT.

V.

1. The present invention relates to a method (Claim 1) of establishing a connection in a telecommunications system (Claim 28), wherein an intermediate network transmits to a user terminal an indication of servicing network entities and the communication services provided by each one.
2. The nearest prior art seems to be better represented by document GB-A-2 294 844 (**D1**), which discloses a system having an unit responsible for communicating to a user an indication of available communication systems each of these communication systems has a particular associated communication protocol and each is able of communicating directly with the terminal. The terminal has to be programmed for supporting the communications with the different systems.
3. In contrast to the prior art, the system and method presently claimed does not require the special capabilities of the terminal. It provides a single interface to different entities (possibly having different communication protocols).
4. This solution is not disclosed in or rendered obvious by the available prior art and Claims 1 and 28 fulfil thus the requirements of Article 33(1) PCT in respect of novelty, inventive step and industrial applicability. The same applies to dependent Claims 2 to 27 and 29, which contain further refinements of the main embodiments of the independent claims.

VII.

1. The cited document **D1** was not **acknowledged** and briefly discussed in the opening part of the description, Rule 5.1 (a) (ii) PCT, making clear the inventive contribution of the claimed invention over the prior art.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IB00/00989

2. The independent claims were not drafted in a **two-part form**, having in their pre-characterizing part all features known from **D1**, Rule 6.3 (b) (ii) PCT.
3. The claims do not include **reference signs** relating to the features referred to therein, Rule 6.2 (b) PCT.
4. On page 12, last line of the description, the wording "as defined by the appended claims" would have to be added at the end of the sentence, PCT Guidelines PG-III 4.3a.

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 102357/PRS	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/IB 00/ 00989	International filing date (day/month/year) 30/06/2000	(Earliest) Priority Date (day/month/year) 30/06/1999
Applicant NOKIA NETWORKS OY et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I):

3. ☐ **Unity of Invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

2
☐ None of the figures.

PCT

REC'D 12 OCT 2001

WIPO PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 102357/PRS	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IB00/00989	International filing date (day/month/year) 30/06/2000	Priority date (day/month/year) 30/06/1999
International Patent Classification (IPC) or national classification and IPC H04Q7/24		
Applicant NOKIA NETWORKS OY et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 6 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 30/01/2001	Date of completion of this report 10.10.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Pais Gonçalves, A Telephone No. +49 89 2399 8806 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IB00/00989

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-12 as originally filed

Claims, No.:

1-32 as originally filed

Drawings, sheets:

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IB00/00989

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 30-32.

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 30-32 are so unclear that no meaningful opinion could be formed (*specify*):
see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the said claims Nos. .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Yes: Claims 1-29

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IB00/00989

	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-29
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-29
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

III.

Claims 30 to 32 do not fulfil the requirements of Rule 6.2(a) PCT.

V.

1. The present invention relates to a method (Claim 1) of establishing a connection in a telecommunications system (Claim 28), wherein an intermediate network transmits to a user terminal an indication of servicing network entities and the communication services provided by each one.
2. The nearest prior art seems to be better represented by document GB-A-2 294 844 (**D1**), which discloses a system having an unit responsible for communicating to a user an indication of available communication systems each of these communication systems has a particular associated communication protocol and each is able of communicating directly with the terminal. The terminal has to be programmed for supporting the communications with the different systems.
3. In contrast to the prior art, the system and method presently claimed does not require the special capabilities of the terminal. It provides a single interface to different entities (possibly having different communication protocols).
4. This solution is not disclosed in or rendered obvious by the available prior art and Claims 1 and 28 fulfil thus the requirements of Article 33(1) PCT in respect of novelty, inventive step and industrial applicability. The same applies to dependent Claims 2 to 27 and 29, which contain further refinements of the main embodiments of the independent claims.

VII.

1. The cited document **D1** was not **acknowledged** and briefly discussed in the opening part of the description, Rule 5.1 (a) (ii) PCT, making clear the inventive contribution of the claimed invention over the prior art.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IB00/00989

2. The independent claims were not drafted in a **two-part form**, having in their pre-characterizing part all features known from **D1**, Rule 6.3 (b) (ii) PCT.
3. The claims do not include **reference signs** relating to the features referred to therein, Rule 6.2 (b) PCT.
4. On page 12, last line of the description, the wording "as defined by the appended claims" would have to be added at the end of the sentence, PCT Guidelines PG-III 4.3a.

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
11 January 2001 (11.01.2001)

PCT

(10) International Publication Number
WO 01/03454 A1

(51) International Patent Classification⁷: H04Q 7/24

(21) International Application Number: PCT/IB00/00989

(22) International Filing Date: 30 June 2000 (30.06.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
9915301.7 30 June 1999 (30.06.1999) GB

(71) Applicant (for all designated States except US): NOKIA NETWORKS OY [FI/FI]; Keilalahdentie 4, FIN-02150 Espoo (FI).

(72) Inventor; and

(75) Inventor/Applicant (for US only): AHMAVAARA, Kalle [FI/FI]; Nokia Networks Oy, Keilalahdentie 4, FIN-02150 Espoo (FI).

(74) Agents: SLINGSBY, Philip, Roy et al.; Page White & Farrer, 54 Doughty Street, London WC1N 2LS (GB).

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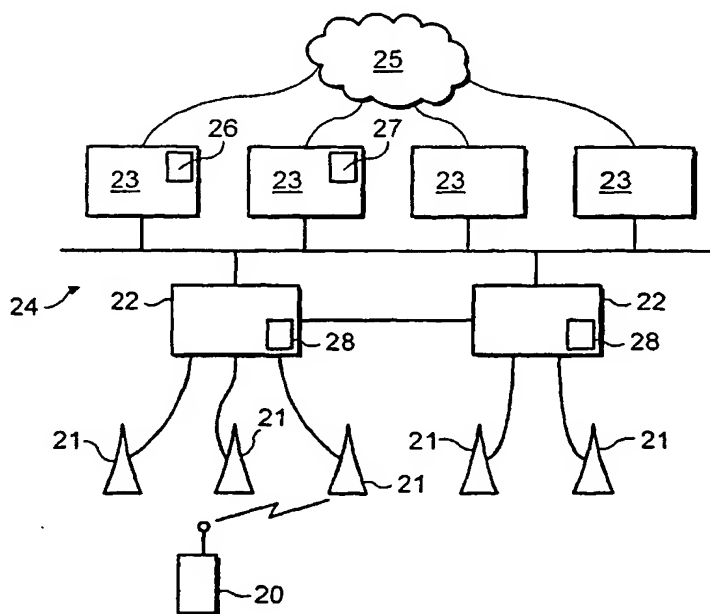
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(54) Title: SERVICE MANAGEMENT



(57) Abstract: A method of establishing a connection in a telecommunications system in which an intermediate network provides for communications between a user terminal and one or more of a plurality of serving network entities each capable of providing communications services to the user terminal by means of at least one telecommunications protocol, the method comprising the step of the intermediate network transmitting to the user terminal an indication of the serving network entities and the communications services provided by each one.

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SERVICE MANAGEMENT

This invention relates to managing services and overseeing mobility of a user in a telecommunication network. The invention is especially, but not exclusively, suitable for implementation in the proposed UMTS (Universal Mobile Telecommunications System) architecture.

Figure 1 shows generally the architecture proposed for UMTS. A mobile station (MS) 1 can communicate by radio with one or more base stations (BS) 2. Each base station is linked by an Iub interface 3 to a single radio network controller (RNC) 4. Each RNC can be linked to one or more BSs. An RNC can be linked to another RNC by an Iur interface 5. Each RNC is linked by an Iu interface 6 to a core network (CN) 7. The CN includes one or more serving nodes that can provide communication services to a connected mobile station, for example a mobile switching centre (MSC) or a serving GPRS (general packet radio service) support node (SGSN) 8. These units are connected by the Iu interface to the RNCs. The CN is also connected to other telecommunications networks 9 such as fixed line networks or other mobile networks to allow onward connection of communications outside the UMTS network. The CN also includes other units such as a home location register (HLR) 10 and a visitor location register (VLR) 11 which help to control access to the network. The BSs and the RNCs and their interconnections constitute a UMTS terrestrial radio access network (UTRAN).

A mobile station can communicate with a core network via an RNC and a base station connected to that RNC. In soft handover (macrodiversity), the mobile station can send traffic communications via more than one base station. Those base stations may be connected to the same RNC or to different RNCs. If the base stations are connected to different RNCs then those RNCs communicate directly with each other via the Iur interface to co-ordinate their actions and to combine signals received from the mobile station. One of those RNCs is designated as the serving

RNC and the others as drift RNCs. Communications between the user and the core network go via the serving RNC only. Thus, whether the mobile station is in soft handover or not its connection to the CN is through a single RNC. It can also arise in other circumstances than macrodiversity that a BS is controlled by a drift RNC, with communications going via serving a serving RNC to the core network.

In the core network each serving node such as an MSC or SGSN can provide a set of services to the mobile station. For example:

- An MSC can provide circuit switched (CS) communications, for example for speech, fax or non-transparent data services, and therefore has a link to other entities in the circuit switched domain such as other CS mobile networks such as GSM (Global System for Mobile Communications) and CS fixed wire networks such as conventional voice telephony networks.
- An SGSN can provide packet switched (PS) communications, for example for packet data protocol (PDP) contexts for internet protocol (IP) data transmission, and therefore has a link to other entities in the packet switched domain such as GPRS-equipped GSM networks and the internet.

The division of services between serving nodes is specified in the system specification and is strictly tied to the assumed network architecture. There may be other nodes than the MSC or SGSN providing overlapping or additional services.

It can be envisaged that in the future some services may be provided differently from the current arrangement. For example, speech services seem likely to migrate from the CS to the PS domain. In order to implement these changes to the network in the form described above is likely to cause substantial disruption. For example, to shift the provision of a fundamental service such as voice traffic to the PS domain may require routing hardware and software, as well as software in each mobile station, to be updated. This would cause great expense and inconvenience to network operators.

It would be desirable for there to be a way in which an operator can move a service previously executed by one type of network node to another type of network node with less disruption, or to introduce a new service via a new or an existing core network .

According to one aspect of the present invention there is provided a method of establishing a connection in a telecommunications system in which an intermediate network provides for communications between a user terminal and one or more of a plurality of serving network entities each capable of providing communications services to the user terminal by means of at least one telecommunications protocol, the method comprising the step of the intermediate network transmitting to the user terminal an indication of the serving network entities and the communications services provided by each one.

According to a second aspect of the present invention there is provided a telecommunications system comprising: a user terminal; a plurality of serving network entities each capable of providing communications services to the user terminal by means of at least one respective telecommunications protocol; an intermediate network providing for communications between a user terminal and one or more of the serving network entities, and being capable of transmitting to the user terminal an indication of the serving network entities and the communications services provided by each one.

Suitably, the user terminal selects the set of serving network entities which together support the set of services the user terminal wishes to use, and attaches to the serving network entities of the set.

Suitably the said indication is generated by the intermediate network. For this purpose the intermediate network may suitably store information defining the

available serving network entities and the service(s) capable of being provided by each one, preferably together with an identifier for each network entity.

The said indication may be transmitted to the user terminal during and/or after establishment by the user terminal of a connection with the intermediate network. In the latter case, the indication may suitably be transmitted in response to a mobility event of the mobile terminal, for example during or generally in consequence of a procedure of the intermediate network consequent on reallocation of equipment in the intermediate network serving the connection with the user terminal. That event may be a serving radio network controller relocation in, for example, a UMTS system or the like.

The intermediate network is suitably capable of adjusting the number of paging areas according to the number of serving network entities, for example with one paging area for each serving network entity. Alternatively, all, or at least more than one, of the serving network entities may use a common paging area.

The intermediate network is suitably capable of constituting a communication path between the user terminal and one or more of the network entities. The user terminal and one or more of the network entities are preferably capable of communicating via the intermediate network.

There may be a plurality of mobile stations, which are preferably operable in similar manner, whereby each mobile station can individually establish or register for communications with one or more serving network entities.

Suitably, for the user terminal an instance of a management process is established for each serving network entity with which that terminal is registered for informing the respective serving network of changes in the connection path to the respective terminal through the intermediate network. The said instance may be run on

processing apparatus local to the user terminal. On a change in the connection path to the mobile station through the intermediate network, each serving network entity may be informed of the change by means of the respective instance.

Suitably the intermediate network is capable of transmitting to a mobile station an indication of one or a plurality of serving network entities and the communications services provided by each one. Preferably, in order to receive a desired service a mobile station is capable of determining one of the serving network entities indicated as providing that service and attempting to establish a connection with that serving network entity via the intermediate network. Preferably, in consequence of the said indication of serving network entities and the communications services provided by each one, the system (most preferably the terminal) is capable of establishing a further instance of the management process for informing a respective serving network entity of changes in the connection path to the said mobile station through the intermediate network. Alternatively, when a list of services is communicated to a terminal the terminal may already know which services are related to which serving nodes and consecutive to which management process. In that case if later the terminal needs to initialise a communication for a specific service then it may already be aware of which serving node it should contact, and thus suitably of which management process a request for such initialisation may be related to. In consequence of the said indication of serving network entities and the communications services provided by each one the system may suitably be capable of terminating an instance of the management process for informing a respective serving network entity of changes in the connection path to the said mobile station through the intermediate network.

The management process may be a mobility management process, suitably operable in accordance with a mobility management protocol, suitably a mobility management protocol of or for the Universal Mobile Telecommunications System or a derivative thereof.

The service(s) related to such management processes may, for example, be call control entities, session management entities, PDP (packet data protocol) entities, SMS (short message service) handling entities, voice-over-IP (internet protocol) entities, H.323 or H.324 entities, or supplementary service instances.

Some preferred features of all aspects of the invention will now be set out.

Suitably the user terminal is capable of communicating by radio and/or another medium with the intermediate network. The user terminal may be a unit that can be termed a mobile station, whether it is in fact mobile or immobile. The user terminal may be a mobile telephone.

The intermediate network is suitably operable according to the Universal Mobile Telecommunications System or a derivative thereof.

The intermediate network may be a radio access network, and is preferably a Universal Mobile Telecommunications System radio access network. The intermediate network is suitably capable of routing signals between the user terminal and one of the serving network entities, for example on the basis of (or in dependence on) a core network domain indicator. The intermediate network may include a Universal Mobile Telecommunications System radio network controller capable of performing the said routing.

Suitably at least one of the serving network entities is capable of providing for communications between the intermediate network and another telecommunications network. Each serving network entity may be a core network. Each serving network entity may include a home location register and/or a visitor location register. Suitably one or more of the serving network entities is capable of providing for circuit switched communications between the intermediate network and another telecommunications network. Suitably one or more of the serving network entities is capable of providing

for packet switched communications between the intermediate network and another telecommunications network.

The or each serving network entity may suitably but not necessarily be a serving network domain or serving network element.

The present invention will now be described by way of example with reference to the accompanying drawings, in which:

figure 1 is a schematic diagram of the currently-proposed architecture for a UMTS telecommunications system;

figure 2 is a schematic diagram of a modified architecture for a UMTS telecommunications system; and

figure 3 is a flow diagram illustrating the operation of a method in the system of figure 2.

The network shown in figure 2 is arranged so that instead of services being offered to a mobile station by a set of rigidly configured core network nodes, services can be offered to the user by a set of logical CN nodes. The services offered by each logical CN node can be reconfigured in a relatively straightforward manner. Furthermore, it is relatively easy to add additional CN nodes to introduce new services.

The network of figure 2 includes a mobile station 20, base stations 21 and RNCs 22. The interconnection of these units and the general aspects of their operation are suitably as for the UMTS system of figure 1.

The network of figure 2 also includes a plurality of core network entities 23 any of which may communicate with any of the RNCs 22 via a distributed communication arrangement 24. The core networks 23 can communicate with external telecommunications networks 25 such as other mobile networks, the internet and fixed line networks, depending on the capabilities of the respective core network. For

example, a core network may include a mobile switching centre (MSC) 26 for communications via voice or fax protocols or a serving GPRS (general packet radio service) support node (SGSN) 27 for data protocol communications. In a large network not all of the core networks 25 may be able to communicate with all of the RNCs 22, for geographical network configuration reasons.

The RNCs 22 include processing apparatus 28 for processing communications through the RNCs, handling control of the base stations 21 (e.g. controlling handovers), managing access of mobile stations into the system, managing mobility (e.g. location management or radio resource management) of mobile stations in the system between base stations, and other functions.

When a mobile station makes contact with the network it makes radio communication with a base station and thereby establishes an RRC (radio resource control) connection with the RNC to which that base station is connected. In the course of setting up that connection the UTRAN indicates to the mobile station the available CN nodes (domains) offering services within the service area controlled by the respective RNC. For each domain the UTRAN indicates to the MS the service(s) offered by that domain, together with an identifier for the domain, suitably a logical identifier such as a core network access number that may be used by the mobile station or other network entities to identify that core network in communications and allow routing to that network.

The MS is aware of which services it supports and for which of those services it requires a connection to the network. The MS can therefore select one or more appropriate CN domains for providing the required service(s). The MS attempts to connect to each selected domain so that it can be provided with a desired service from that domain.

For example, if the MS connects to the network requiring a circuit switched fax connection and a packet switched voice connection, the MS receives from the UTRAN a message indicating the available domains and the services offered/supported by each. The MS then selects one CN domain that is offering a fax service and one CN domain that is offering a packet switched service capable of carrying voice traffic. The MS then attempts to make a connection to each one of those domains. The domains may be the same or different.

The process is illustrated generally in figure 3.

The said core network access number can simply be an identifier that is generated by the RNC for use in its communications with the MS. The MS can use the core network access number to indicate to the RNC which core network it wishes to access but the subsequent forwarding of an access request message on to the relevant core network may be done by the RNC using a different, true identifier that is unknown to the MS. Thus, from the point of view of the MS the RNC transparently passes its communications on to the relevant core network. Once a core network accepts and establishes an attachment to an MS the MS can be informed of a true identifier for the core network to allow it to direct communications to the core network via another RNC if necessary. The RNC preferably has logic to allow it to direct communications to a suitable CN serving entity of the desired domain – for example randomly, on the basis of information determined by the RNC, on the basis of information given to the RNC by one or more of the serving node (e.g. their loads) or on the basis of information given to the RNC by the user equipment (UE) (e.g. the identity of the entity that previously handled the UE's communications and therefore may have some information on the UE). When such an entity has been selected the RNC may address that entity by the identifier of a specific entity given to the user equipment by the entity itself.

As the mobile station moves within the network the base station(s) and the RNC(s) serving it may change, as may the serving nodes in the core network. To cope with this the UMTS system provides for mobility management (MM) protocol instances which handle location updates within the network in idle mode. In connected mode (i.e. when an RRC connection exists between the mobile station and an RNC) handover procedures are used, in which a connection is switched from a former node to a new node; the same principle is used whether the changing node is the BS, RNC or serving CN. In the system of figure 2, on attaching to a domain a mobile station initiates a UMTS mobility management instance especially for that domain. Therefore, associated with each MS there is a MM instance for each CN domain to which that MS is attached. In principle each MM instance operates independently of the others, following the UTRAN paging area indication and making appropriate location updates to its respective CN domain. (In practice the MM instances may be somewhat linked by, for example, a common paging area). By this means, each CN domain to which the MS is attached can be kept independently updated of the mobile station's location so that it can route communications to the mobile station accordingly.

As the operator updates the network and offers different services through different CN domains this is handled automatically through by the connection arrangement described above. When the MS accesses the network, if the operator now offers a service through a different CN node than before the MS simply attaches to the new CN node that is indicated to the mobile as being capable of providing the desired service. Thus the above arrangement copes automatically with the addition of new CN domains to provide services and with adjustment of the functional split of services between CN domains.

The system is preferably also capable of accommodating changes in the attachment pattern of the MS even whilst it is connected to the network. If the mobile receives from the UTRAN a message indicating a change in the split of services between CN

nodes that affects the services for which the mobile station is attached then it suitably changes its pattern of attachment to meet with the new split of services. To meet the new split of service any of the following changes may be made, as appropriate:

1. Changing the arrangement for provision of a service from one CN domain to which the MS is already attached to another CN domain to which the MS is already attached. In this case the existing MM instance for that CN domain can also be updated to reflect the change in services being accessed through the respective CN domain.
2. Dropping the attachment for provision of a service from one CN domain and establishing an attachment for provision of that service from another CN domain to which the MS was not previously attached. In this case the existing MM instance for the dropped CN domain can be terminated and a new MM instance established for the newly attached CN domain.

This capability offers great flexibility to operators in the provision of new services or the reconfiguration of a network to provide existing services through new nodes. In particular, as services migrate from the CS domain to the PS domain the above arrangement provides the capacity for relatively straightforward reconfiguration of MS to CN connections from nodes that formerly provided a service in the CS domain to nodes that provide an equivalent service in the PS domain.

If the mobile station is informed of the availability of a service that is unknown to the mobile station then it can suitably ignore the availability of that service. By this means the system described above may be used to assist in version management – that is to assist compatibility between older and newer equipment in the system. Thus older mobile stations that are not compatible with newer services can cope with indications of the availability of services with which they are not compatible.

The applicant draws attention to the fact that the present invention may include any feature or combination of features disclosed herein either implicitly or explicitly or any generalisation thereof, without limitation to the scope of any of the present claims. In

view of the foregoing description it will be evident to a person skilled in the art that various modifications may be made within the scope of the invention.

CLAIMS

1. A method of establishing a connection in a telecommunications system in which an intermediate network provides for communications between a user terminal and one or more of a plurality of serving network entities each capable of providing communications services to the user terminal by means of at least one telecommunications protocol, the method comprising the step of the intermediate network transmitting to the user terminal an indication of the serving network entities and the communications services provided by each one.
2. A method as claimed in claim 1, wherein in order to receive a desired set of services the mobile station determines a set of the serving network entities indicated as together providing that set of services and attempts to establish a connection with the serving network entities in the set via the intermediate network.
3. A method as claimed in claim 2, wherein the said indication is generated by the intermediate network.
4. A method as claimed in any preceding claim wherein the user terminal is capable of communicating by radio with the intermediate network.
5. A method as claimed in any preceding claim wherein the intermediate network is operable according to the Universal Mobile Telecommunications System or a derivative thereof.
6. A method as claimed in claim 5, wherein the serving network entities are core networks.
7. A method as claimed in any preceding claim, wherein the intermediate network is a radio access network.

8. A method as claimed in claim 7, wherein the intermediate network is a Universal Mobile Telecommunications System radio access network.
9. A method as claimed in any preceding claim, wherein the said indication is transmitted to the user terminal during the establishment of a connection between the user terminal and the intermediate network.
10. A method as claimed in any preceding claim, wherein the said indication is transmitted to the user terminal during establishment of a radio resource control connection between the user terminal and the intermediate network.
11. A method as claimed in any of claims 1 to 8, wherein said indication is transmitted to the user after establishment by the of a connection between the user terminal and the intermediate network.
12. A method as claimed in any of claims 1 to 8 or 11, wherein the said indication is transmitted to the user terminal during a procedure of the intermediate network consequent on reallocation of equipment in the intermediate network serving the connection with the user terminal.
13. A method as claimed in claim 11 as dependant directly or indirectly on claim 5, wherein the said indication is transmitted to the user terminal in consequence of a serving radio network controller relocation.
14. A method as claimed in any preceding claim, wherein the said indication is transmitted to the user terminal in consequence of a change in serving network entity.

15. A method as claimed in any preceding claim, wherein the intermediate network is capable of adjusting the number of paging areas according to the number of serving network entities.

16. A method as claimed in any preceding claim, wherein at least one of the serving network entities is capable of providing for communications between the terminal and another telecommunications network.

17. A method as claimed in any preceding claim, wherein at least one of the serving network entities is capable of providing for circuit switched communications between the terminal and another telecommunications network.

18. A method as claimed in any preceding claim, wherein at least one of the serving network entities is capable of providing for packet switched communications between the terminal and another telecommunications network.

19. A method as claimed in any preceding claim, wherein the intermediate network is capable of routing signals between the user terminal and one of the serving network entities.

20. A method as claimed in claim 19, wherein the intermediate network is capable of routing signals from the mobile station to a selected one of the serving network entities on the basis of a core network domain indicator.

21. A method as claimed in claim 19 or 20, wherein the intermediate network includes a Universal Mobile Telecommunications System radio network controller capable of performing the said routing.

22. A method as claimed in any preceding claim, comprising establishing for each user terminal for each serving network entity with which that terminal is registered an

instance of a management process for informing the respective serving network of changes in the connection path to the respective mobile station through the intermediate network, whereby on a change in the connection path to the mobile station through the intermediate network, each serving network entity may be informed of the change by means of the respective instance.

23. A method as claimed in claim 22, comprising the step of, in consequence of the said indication of serving network entities and the communications services provided by each one, establishing a further instance of the management process for informing a respective serving network entity of changes in the connection path to the mobile station through the intermediate network.

24. A method as claimed in claim 22, comprising the step of, in consequence of the said indication of serving network entities and the communications services provided by each one, terminating an instance of the management process for informing a respective serving network entity of changes in the connection path to the said mobile station through the intermediate network.

25. A method as claimed in claim 23 or 24, comprising the step of, in consequence of the said indication of serving network entities and the communications services provided by each one, modifying an instance of the management process for informing a respective serving network entity of changes in the connection path to the said mobile station through the intermediate network.

26. A method as claimed in any of claims 22 to 25, wherein the management process is a mobility management process.

27. A method as claimed in claim 26, wherein the management process is operable in accordance with a mobility management protocol.

28. A telecommunications system comprising:

a user terminal;

one or more serving network entities each capable of providing communications services to the user terminal by means of at least one respective telecommunications protocol;

an intermediate network providing for communications between a user terminal and one or more of the serving network entities, and being capable of transmitting to the user terminal an indication of the serving network entities and the communications services provided by each one.

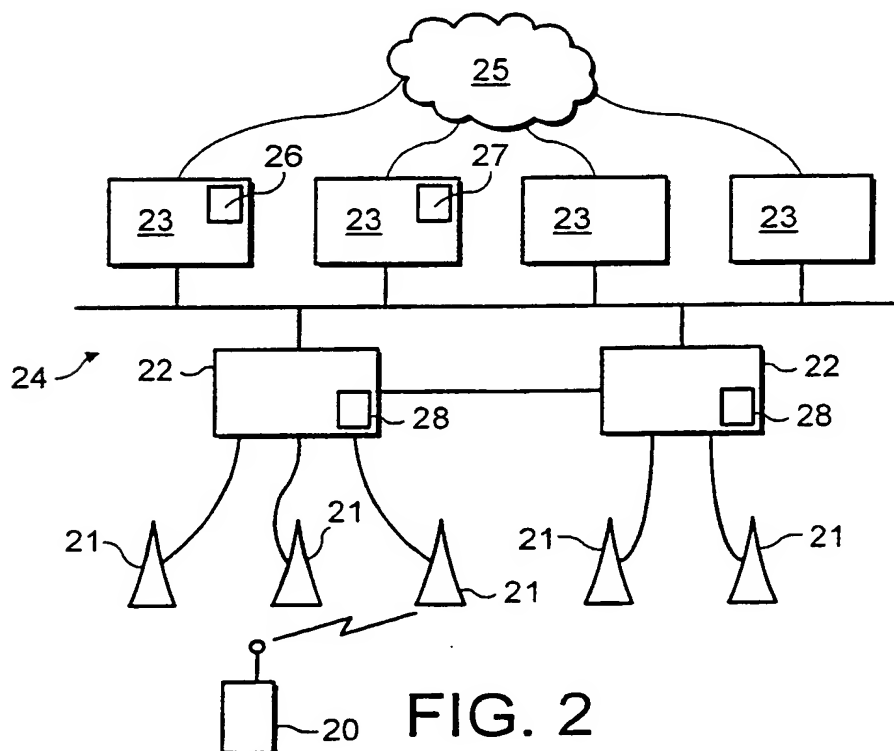
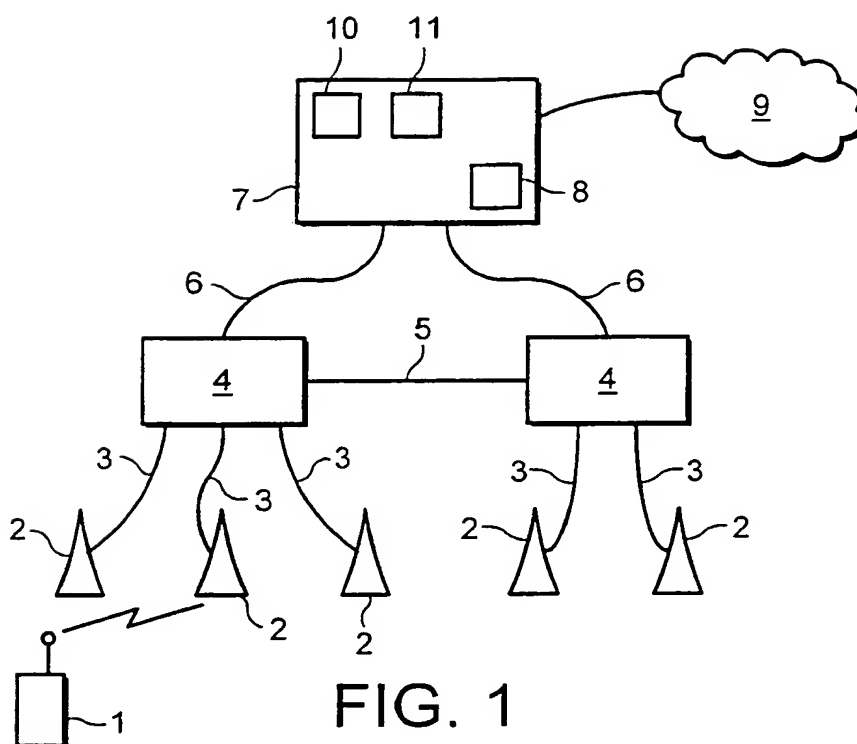
29. A telecommunications system as claimed in claim 28, comprising processing apparatus capable of for each user terminal establishing for each serving network entity with which that terminal is registered an instance of a management process for informing the respective serving network of changes in the connection path to the respective user terminal through the intermediate network, whereby on a change in the connection path to the user terminal through the intermediate network, each serving network entity may be informed of the change by means of the respective instance.

30. A method for establishing a connection substantially as herein described with reference to figures 2 and 3 of the accompanying drawings.

31. A method for managing communications substantially as herein described with reference to figures 2 and 3 of the accompanying drawings.

32. A telecommunications system substantially as herein described with reference to figures 2 and 3 of the accompanying drawings.

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2 / 2

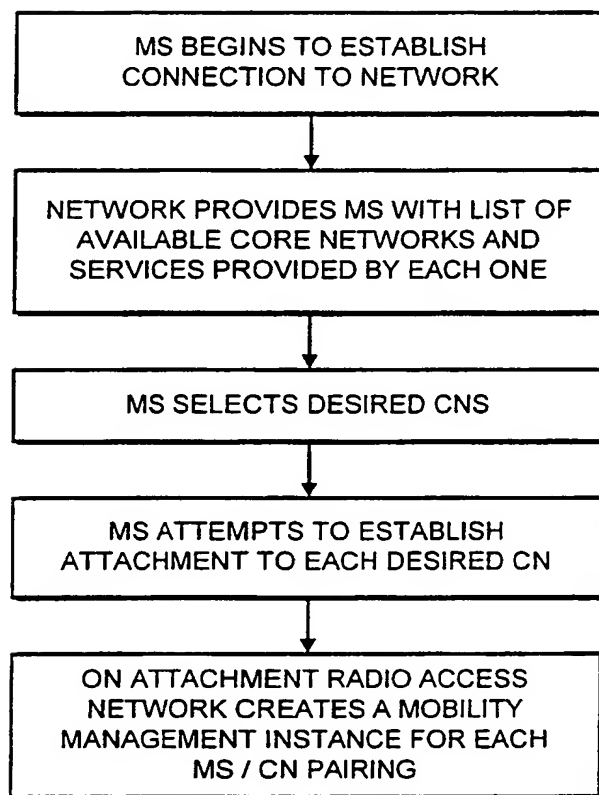


FIG. 3

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 00/00989

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H0407/24

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H040

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 294 844 A (MOTOROLA INC) 8 May 1996 (1996-05-08) page 3, line 22 -page 4, line 25 claims 1,2	1,4,6,9, 17,28
A	<p style="text-align: center;">---</p> <p>BERRUTO E ET AL: "ARCHITECTURAL ASPECTS FOR THE EVOLUTION OF MOBILE COMMUNICATIONS TOWARD UMTS" IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS,US,IEEE INC. NEW YORK, vol. 15, no. 8, October 1997 (1997-10), page 1477-1486 XP000721279 ISSN: 0733-8716 the whole document</p> <p style="text-align: center;">---</p> <p style="text-align: center;">-/--</p>	1-29

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
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- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

G document member of the same patent family

Date of the actual completion of the international search

29 August 2000

Date of mailing of the international search report

04/09/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Pecci, R

INTERNATIONAL SEARCH REPORT

I. International Application No

PCT/IB 00/00989

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>SCHIEDER A ET AL: "GRAN - A NEW CONCEPT FOR WIRELESS ACCESS IN UMTS" ISS. WORLD TELECOMMUNICATIONS CONGRESS. (INTERNATIONAL SWITCHING SYMPOSIUM), CA, TORONTO, PINNACLE GROUP, 21 September 1997 (1997-09-21), page 339-345 XP000704485 the whole document</p> <p>-----</p>	1-29

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB 00/00989

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2294844 A	08-05-1996	AU 700136 B	24-12-1998
		AU 3980095 A	31-05-1996
		CN 1141111 A	22-01-1997
		DE 19581443 T	27-02-1997
		WO 9614719 A	17-05-1996
		FI 962789 A	03-09-1996
		JP 9507986 T	12-08-1997
